



ATOP-R&D

Human Factors Newsletter # 05-05

March 5, 2005 – March 18, 2005

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Technical Note: *Pilot Behavior and Course Deviations during Precision Flight*. Jeffrey B. Mulligan and Xavier L.C. Brolly, NASA Ames Research Center, Moffett Field, CA.

Abstract. In the fall of 2003, a series of flight tests was performed in the Tullahoma, Tennessee area to assess the ability of non-instrument rated helicopter pilots to fly precision routes with the aid of a Global Positioning System (GPS) receiver. The navigation performance of pilot subjects was assessed from GPS recordings of the flight trajectory, while pilot behavior was recorded using four video cameras, two of which were attached to a goggle frame worn by the pilot. This paper describes the processing methods developed for these data, and presents some preliminary results. For more information, please point to:

<http://www.hf.faa.gov/docs/508/docs/vfSPIE05.pdf>.

This research supports the Administrator's Flight Plan Goal for Increased Safety, Objective 2: Reduce the number of fatal accidents in general aviation.

Point of Contact: W. Krebs, ATOP-R&D

Human Factors Researcher on Detail: On March 14th, the William J. Hughes Technical Center provided a senior engineering research psychologist to ATO-E for a 90-day detail assignment. During this time, the researcher will map human factors activities currently occurring within the En Route program and recommend further actions necessary to make En Route more effective from the perspective of the person-machine system. *This research supports the Administrator's Flight Plan Goal for Increased Safety, Objective 7: Enhance the safety of FAA's air traffic systems* (E. Stein, WJHTC))

NTML: On March 15th, William J. Hughes Technical Center research psychologists supported operational testing of version 3.05 of the National Traffic Management Log (NTML). They observed specialists from the field exercise new system capabilities as well as other commonly used functions. The NTML is used to communicate traffic management events throughout the NAS. The NAS Human Factors Group has been involved in the design and development of the NTML for approximately three years. *This research supports the Administrator's Flight Plan Goal for Increased Safety, Objectives 7: Enhance the safety of FAA's air traffic systems. This research also supports the Administrator's Flight Plan Goal for Greater Capacity, Objective 1: Increase capacity to meet projected demand.* (T. Yuditsky, WJHTC)

Annual Report: The FY04 ATO-P (R&D) Human Factors Annual Report is now available on-line. This report highlights our research in Air Transportation Human Factors, Aviation Maintenance, Flight Technology and Procedures, General Aviation, Vertical Flight, Air Traffic/Airway Facilities (Technical Operations), Human Factors Engineering, and Aeromedical Research. For a copy, point to: <http://www.hf.faa.gov/report.htm>. *This research supports the Administrator's Flight Plan Goals for Increased Safety, Greater Capacity, International Leadership, and Organizational Excellence.* (W. Krebs, ATO-P R&D)

JANUS:

- On March 1st, Luis Castro, Manager of Field Operations for Runway Safety and Operational Services (ATO-S), Dino Piccione (ATO-P), Dr. Paul Krois (ATO-P, by phone), and Dr. Julia Pounds (CAMI), met with Capt. Don McClure (Eastern, Ret./USAir/Air Line Pilots Association) to discuss JANUS-Flight (FLT). Capt. McClure played a central role in development of USAir's Altitude Awareness Program, the forerunner of current Aviation Safety Action Programs (ASAP). Included was a briefing on the status of the JANUS-FLT project and a discussion of future JANUS-FLT activities. Future activities include sharing information about the project with ALPA representatives and the pilot community, familiarization with different ASAP programs, and identifying ways to have line pilots involved in further development of the JANUS-FLT project. Activities will be coordinated through Capt. McClure. *This research supports the Administrator's Flight Plan Goal for Increased Safety, Objectives 1, 4, and 7: Reduce the commercial fatal accident rate; Reduce the risk of runway incursions; Enhance the safety of FAA's air traffic systems* (J. Pounds, CAMI)
- On March 7th and 8th, Mr. Luis Castro visited CAMI's Aerospace Human Factors Research Division to discuss ongoing projects and future activities. Dr. Julia Pounds and Ms. Janine King provided a status briefing on the JANUS-FLT project. The goal of the project is to develop a structured interview tool to help clarify the role of human factors in pilot deviations and runway incursions. Local pilots with Part 91 and Part 135 experience participated as subject matter experts in past activities to develop the materials, which they confirmed by flying scenarios in CAMI's Advanced General Aviation Research Simulator. Currently, local pilots with Part 121 experience are reviewing the materials to ensure that factors relevant to Part 121 pilots are included. Prior to a field test, the tool will be tested using table-top analysis of archival runway incursion reports and post-flight interviews. The

latter activity is being coordinated with Dr. Archie Dillard, Chief Scientific & Technical Advisor, Flight Simulation Systems (AFS-400). Mr. Castro met briefly with Dr. Dillard and toured the Boeing 737-800 simulator, which has the next generation of glass cockpit and FMS. The simulator is located at the Mike Monroney Aeronautical Center (Mgr. is Steve Barnes, AFS-440). *This research supports the Administrator's Flight Plan Goal for Increased Safety, Objectives 1, 4, and 7: Reduce the commercial fatal accident rate; Reduce the risk of runway incursions; Enhance the safety of FAA's air traffic systems* (J. Pounds, CAMI)

FAA Debuts On-Line Human Factors Training: To ensure adequate human factors training is readily available, the FAA has launched an on-line "Human Factors Awareness Course" for FAA employees. The purpose of this course is to introduce human factors concepts and methods with the goal of fostering an understanding of the role and contribution of human factors in system design, development, and implementation. While targeted for those who support FAA system acquisitions, the course is open to all, including the general public. FAA employees are eligible for a Certificate of Training upon course completion. The training is available at www.hf.faa.gov/webtraining/index.htm. More in-depth information on specific FAA human factors programs and research can be found at <http://www.hf.faa.gov>. Guidance on the role of human factors in FAA acquisition programs can be found at <http://www.hf.faa.gov/tools.htm>. *This research supports the Administrator's Flight Plan Goal for Organizational Excellence, Objective 1: Make the organization more effective with stronger leadership, increased commitment of individual workers to fulfill organization-wide goals, and a better prepared, better trained, safer diverse workforce.* (G. Hewitt, ATO-P R&D)

TMA: Researchers from the William J. Hughes Technical Center's NAS Human Factors Group briefed the Traffic Management Advisor (TMA) Program Office on the methodology used and results of the TMA simulation conducted in October and November of 2004. Eight controllers participated in the simulation. They were tested under four conditions in which TMA delay times were presented in different locations (TMA list only or in the list and in the range data block [RDB]) and in two formats (minutes only or minutes plus tens of seconds). There was also a miles-in-trail condition as a baseline. The results indicated that presenting the delay times in the range data-block was highly beneficial - less time was spent viewing the list and more time viewing the arrival traffic, metering accuracy (proportion of arrivals within one minute of their scheduled time) was better, and controller ratings of effort and frustration were lower. In direct comparisons, participants rated the list plus RDB display as somewhat to much better than the list only display for performing all their control tasks. Fewer differences were found for the time format, but they generally favored the minutes only format. *This research supports the Administrator's Flight Plan Goal for Increased Safety, Objective 7: Enhance the safety of FAA's air traffic systems.* (M. McAnulty, WJHTC)

More information on human factors research can be found at the FAA Human Factors (ATOP-R&D) web site: <http://www.hf.faa.gov>

Paul Krois
FAA (ATO-P R&D Human Factors)



April 2-7, 2005 – CHI 2005, Portland, OR chi2005-chair@acm.org.

April 5-7, 2005 – Aviation Testing Expo 2005: Scientific Conference and Technology Forum, Europe, Messe Hamburg, Germany <http://www.aerospacetesting-expo.com/northamerica/conf+forum.html>

April 11-14, 2005 – SAE 100th Anniversary World Congress, Cobo Hall, Detroit, MI
<http://www.sae.org/congress/about/news/congressdates.htm>

April 12-13, 2005 – R,E&D Advisory Committee Meeting, Bessie Coleman Auditorium, FAA Headquarters, Wash., DC Gloria.dunderman@faa.gov

April 12-18, 2005 – Sun ‘n Fun 2005, Lakeland, FL <http://www.sun-n-fun.org/>

April 13 - 16, 2005 - Society for Behavioral Medicine Annual Meeting and Scientific Sessions, Boston, MA <http://www.sbm.org/>

April 15 - 17, 2005 - Annual Conference: Society for Industrial/Organizational Psychology (SIOP), Los Angeles, CA lhakel@siop.bgsu.edu , <http://www.siop.org>

April 17-22, 2005 – International Federation of Air Traffic Controller’s Associations, Melbourne, Australia http://www.ifatca.org/conferences/annual_conference.htm

April 18-21, 2005 – 13th International Symposium on Aviation Psychology (ISAP), Cox Convention Center, Oklahoma City, OK <http://www.wright.edu/isap/>

April 26-28, 2005 – Flight Safety Foundation 50th Annual Corporate Aviation Safety Seminar, Orlando, FL http://www.flightsafety.org/cass05_preagenda.html

April 28-29, 2005- Mini-Conference on Human Factors in Complex Sociotechnical Systems, hosted by HFES South Jersey Chapter, Atlantic City, NJ, <http://www.sjhfes.org/>

May 9-12, 2005 - 76th Annual Scientific Meeting of the Aerospace Medical Association, Kansas City, MO <http://www.asma.org/>

May 14-15, 2005 – 8th Alaska State Aviation Trade Show and Conference, Anchorage International Airport, Anchorage, AK <http://www.alaskaairmen.com/>

May 17-18, 2005 – Aviation Maintenance & Human Factors Workshop & Symposium, Crowne Plaza, Arlington, TX exhibitions@sae.org

May 23-24, 2005 – PROP Europe 2005, Frankfurt, Germany
<http://www.turbineair.com/prop.html>

May 23-26, 2005 – DoD TAG (Human Factors Engineering Technical Advisory Group), Marriott Bay Point Resort Golf and Yacht Club, Panama City, FL
<http://hftag.dtic.mil/meetschl.html>

May 26-29, 2005 – American Psychological Society 17th Annual Convention, Westin Century Plaza Hotel, Los Angeles, CA <http://www.psychologicalscience.org/convention/>

June 2005 – 6th USA/Europe ATM Seminar, Baltimore, MD (note: call for papers deadline is January 28, 2005) <http://atmseminar.eurocontrol.fr/>

June 4, 2005 – AOPA Fly-in and Open House, Frederick, MD <http://www.aopa.org/>

June 13-19, 2005 - Paris Air Show 2005, Parc des expositions de Paris Nord - Le Bourget, 93350, France. www.paris-air-show.com

June 20-22, 2005 – 3rd Human System Integration Symposium, Sheraton National Hotel, Arlington, VA <http://www.navalengineers.org/Events/HSIS2005/HSIS05Index.html>

June 27-30, 2005 – TRB 3rd International Driving Symposium on Human Factors in Driver Assessment, Training, and Vehicle Design, Rockport, Maine

June 28-30, 2005 – AAMI Human Factors, Ergonomics, and Patient Safety for Medical Devices, Capital Hilton, Washington, DC <http://www.aami.org/meetings/hf/>

July 22-28, 2005 – HCI International 2005, 11th International Conference on Human-Computer Interaction, Caesars Palace, Las Vegas, NV hci2005@ecn.purdue.edu

July 25-31, 2005 – EAA AirVenture Oshkosh 2005, Oshkosh, WI <http://www.airventure.org>

August 15-18, 2005 - 43rd AIAA Aerospace Sciences Meeting and Exhibit, Hyatt Regency San Francisco at Embarcadero Center, San Francisco, CA <http://www.aiaa.org/>

August 18-21, 2005 - 113th Convention of the American Psychological Association, Wash, DC
<http://www.apa.org/convention>

August 22-26, 2005 – SAE G-10 (Behavioral Engineering Technology Committee Meeting, Washington, DC http://forums.sae.org/access/dispatch.cgi/TEAG10_pf

September 12-16, 2005 – Interact 2005, Tenth IFIP TC13 International Conference on Human-Computer Interaction, Rome, Italy <http://www.interact2005.org/>

September 19-23, 2005 – ANA 2005 Aviation Conference and Exhibition, Connecticut Convention Center, Hartford, CN <http://www.aerospace-na.com/ace2005.asp>

September 20-21, 2005 - R,E&D Advisory Committee Meeting (joint meeting with NASA's Aerospace Research Advisory Committee), Bessie Coleman Auditorium, FAA Headquarters, Wash., DC Gloria.dunderman@faa.gov

September 25-28, 2005 - 11th Ka and Broadband Communications Conference and 23rd AIAA International Communications Satellite Systems Conference 2005 (organized by IIC), Aurelia Convention Center, Rome, Italy <http://www.aiaa.org/>

September 26-28, 2005 - AIAA 5th Aviation, Technology, Integration, and Operations Forum (ATIO), Hyatt Regency Crystal City, Arlington, VA <http://www.aiaa.org/>

September 26-28, 2005 - AIAA 2nd Intelligent Systems Conference (IS), Hyatt Regency Crystal City, Arlington, VA <http://www.aiaa.org/>

September 26-30, 2005 – Human Factors and Ergonomics Society 49th Annual Meeting, Royal Pacific Resort at Universal Orlando, Orlando, FL <http://hfes.org/meetings/menu.html>

October 3-6, 2005 – SAE 2005 AeroTech Congress and Exhibition, Gaylord Texan Resort and Convention Center, Dallas/Fort Worth Airport Area, Texas
<http://www.sae.org/events/conferences/aerospace/>

October 6-9, 2005 – Aviation North Expo Conference, Fairbanks Princess Riverside Lodge, Fairbanks, AK www.AviationNorth.org

October 24-25, 2005 – National Academies Institute of Medicine Annual Meeting, National Academy of Sciences, Washington, DC <http://wwwsearch.nationalacademies.org/>

October 30-November 7, 2005 – ATCA 50th Annual Conference and Exposition, Dallas, TX
http://www.atca.org/event_items.asp.

October 30—November 3, 2005 – 24th Digital Avionics Systems Conference, Hyatt Regency Crystal City, Wash., DC <http://www.dasconline.org>

November, 2005 – DoD TAG (Human Factors Engineering Technical Advisory Group) Meeting, Baltimore, MD <http://hfetag.dtic.mil/meetschl.html>

November 6-9, 2005 - ACI World / Pacific Conference and Exhibition, Auckland, New Zealand.
www.auckland-airport.co.nz

November 7-10, 2005 – Flight Safety Foundation 58th Annual International Air Safety Seminar, Moscow, Russia http://www.flightsafety.org/iass05_cfp.html

November 8-10, 2005 – Aerospace Testing Expo, North America: Scientific Conference and Technology Forum, Long Beach Convention Center, Long Beach, CA
<http://www.aerospacetesting-expo.com/northamerica/conf+forum.html>

November 10, 2005 - 34th Annual Meeting of the Society for Computers in Psychology, Toronto, Ontario, Canada <http://www.scip.ws>

November 10 - 13, 2005 - 46th Psychonomic Society Annual Meeting, Toronto, Ontario, Canada <http://www.psychonomic.org/meet.htm>

January 9-12, 2006 - 44th AIAA Aerospace Sciences Meeting and Exhibit, Reno Hilton, Reno, NV <http://www.aiaa.org/>

January 22-26, 2006 – TRB 85th Annual Meeting, Washington, DC <http://trb.org/calendar/>
May 14-18, 2006 - 77th Annual Scientific Meeting of the Aerospace Medical Association, Orlando, FL <http://www.asma.org/>

March 22 - 25, 2006 - Society for Behavioral Medicine Annual Meeting and Scientific Sessions, San Francisco, CA www.sbm.org/annualmeeting/index.html

May 25-28, 2006 – American Psychological Society 18th Annual Convention, New York Marriott Marquis, New York City, NY <http://www.psychologicalscience.org/convention/>

*July, 2006 - 26th International Congress of Applied Psychology, Athens, Greece
dgeorgas@dp.uoa.gr ,
http://www.erasmus.gr/dynamic/conventions.asp?conv_id=21r/dynamic/conventions.asp?conv_id=21*

August 10-13, 2006 – American Psychological Association Annual Meeting, New Orleans, LA
<http://www.apa.org/convention05/future.html>

Note: Calendar events in Italics are new since the last Newsletter



Comments or questions regarding this newsletter?
Please contact Bill Berger at (334) 271-2928
or via e-mail at bill.ctr.berger@faa.gov

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